REMARKS

Applicant gratefully acknowledges the examiner's reasons for allowing claims 1, 4-6, 9-10, 18-30, 77-89 and 98-110. However, claims 11, 14-17, 73-76 and 90-97 were still rejected, while claims 31-43 and 64-72 are withdrawn.

Claims 11, 14-17, 73-76 and 90-97 have been rejected under 35 U.S.C. § 102 as being "anticipated" by Cohen, US Patent No. 5,906,297.

It is indicated in the office action that this new ground of rejection was necessitated by applicant's amendment of the claims. However, it should be noted that as far as claims 11, 15-17, 73, 90 and 92-93 are concerned, these claims were not amended in applicant's previous response.

The Cohen patent is cited in the specification (page 2, line 4), and also was submitted by applicant in an Information Disclosure Statement on April 28, 2004.

Claim 73 has been cancelled without prejudice.

Regarding claims 11, 14-17, 74-76 and 90-97, the office action points to the following portions of the Cohen reference:

- Fig. 1, reference sign 104 and col. 5, lines 1-10, where Cohen has been read as disclosing *(A) "producing coding data including, for each subset containing at least one integer of the input list, data representing the position of each integer of the input list within said subset"*;
- Col. 6, lines 7-25 "Grouping of bytes", Fig. 2-4, where Cohen has been read as disclosing *(B) "and, at least if said layer is the last coding layer, data representing the position of said subset in the pattern"*;
- Col. 5 (2 ?), lines 5-25, where Cohen has been read as disclosing *(C) "if said layer is not the last coding layer, forming a further integer list representing the position, in the pattern of said layer, of each subset containing at least one integer of the input list, and providing said further integer list as an input list of the next layer"*.

However, the office action did not specifically mention which portions of the Cohen disclosure would anticipate the following features additionally recited in independent claims 11, 74, 90 and 95:

- *(D) "wherein for each coding layer, a respective integer range is divided into subsets according to a predetermined pattern"* (claims 11, 74, 90 and 95);

- *(E) "wherein, in the pattern of each layer, the subsets are consecutive intervals consisting of the same number of integers, said number of integers being a whole power of 2 for each layer"* (claims 11 and 90);

- *(F) "storing the coding data produced for said layer in first and second files having a common addressing mechanism, whereby for each subset containing at least one integer of the input list of said layer, the data representing the position of said subset in the pattern are stored in the first file at a first address and the data representing the position of each integer of the input list within said subset are stored in the second file at a second address corresponding to said first address according to the common addressing mechanism"* (claims 74 and 95).

Claims 11 and 90 have been amended to indicate that the number (n) of successive coding layers is two or more.

Cohen's disclosure is presented as an improvement of Antoshenkov's compression method commented in col. 2, line 44 – col. 3, line 29 (see also page 1, line 29 – page 2, line 4 of the present application).

In Antoshenkov's method, regions of a bitmap vector whose components have a constant value form gap bytes or GBYTES. The remaining regions are encoded as bitmap segments called map bytes or MBYTES. In Cohen's purported improvement, the GBYTES take only the value 00000000 and an additional type of byte, namely an offset byte (OBYTE) is introduced as having just one byte set to the value one (col. 5, lines 62-67).

Fig. 3 of Cohen illustrates the basic structural element (atom) of the compressed output representing a group of consecutive bytes of the input bitmap. It starts with a control byte (CBYTE) 310 followed by zero or more gap size bytes 320 and by zero or more MBYTEs 330 (col. 6, lines 36-39). The CBYTE has a five-bit TFIELD indicating the type of atom and, in conjunction with the gap size bytes 320, to represent the gap size of the group being compressed, and a three-bit DFIELD used to describe either the OBYTE in the group or the number of MBYTEs in the group.

The grouping of the bytes to be represented by the respective atoms is described in col. 6, lines 7-25 to which the examiner referred, in connection with Fig. 4.

There are two types of groups:

- the "gap bit group" containing zero or more contiguous GBYTES followed by one OBYTE. In Fig. 4, reference numerals 402, 410, 420 and 430 designate gap bit groups;

- the "gap map group" containing zero or more GBYTES and zero or more MBYTES. In Fig. 5, reference numerals 530 and 540 designate gap map groups.

Cohen completely fails to disclose any counterpart of the notion of coding layers according to the present invention.

If one tried to map such a notion on Cohen's method, there could only be one coding layer, so that the subject matter of claims 11 and 90, at least as amended hereby, is novel over Cohen.

In claims 11 and 90, reference is made in each layer to a "predetermined pattern" providing subsets. It seems impossible to identify any patterns that could be defined layer by layer in Cohen's disclosure.

The present invention as defined in claims 11 and 90 advantageously makes an iterative use of a plurality of coding layers. This is related to the above-mentioned feature (C), whereby a further integer list is produced in a coding layer which is not the last one, in order to be further coded in the next layer.

Contrary to what has been stated in the office action, this feature (C) simply is not disclosed or suggested by the Cohen reference. In particular, col. 5, lines 5-25 pointed out by the office action have nothing to do with such a feature, nor does col. 2, lines 5-25 to which the office action presumably intended to refer in view of the comments on inherency.

It cannot be seen how Cohen's method could be meaningfully iterated to include more than one coding layer, and those skilled in the art had no incentive to try this.

It is thus submitted that the subject matter of claims 11 and 90 is patentably distinct over Cohen, as are their dependent claims 14-17 and 91-94.

Claims 74 and 95 each include the above feature (F) for which the office action did not give any supporting reasoning regarding the purported anticipation by Cohen. Accordingly, the rejections of those claims should be withdrawn.

Should the examiner consider maintaining his rejection of these two claims, applicant respectfully requests that a subsequent and non-final action specifically point out which part of Cohen would be found to anticipate the feature (F).

Applicant does not understand the rejection based on Cohen, because Cohen clearly does not suggest, for each subset containing at least one integer of the input list, a common addressing mechanism for two files containing, at respective corresponding addresses, the data representing the position of the subset in the pattern and the data representing the position of each integer of the input list within that subset.

Such a common addressing mechanism is quite advantageous in the context of the present invention because it facilitates the autonomous processing of certain portions of the input list in various applications. Such "local" processing is not possible in the case of Cohen or Antoshenkov, where the handling of a portion of the input bit stream requires the complete decoding of at least all the byte groups preceding that portion. Accordingly, there would be no suggestion to attempt to modify either reference in this manner. Further, this significant difference is related to the fact that Cohen aims at maximizing the compression rate while the invention of claims 74 and 95 is more oriented to an efficient handling of large lists (page 2, lines 13-15).

It is thus submitted that claims 74 and 95 are allowable over Cohen, as are their dependent claims 75-76 and 96-97.

It is respectfully submitted that the present response overcomes all the rejections made in the outstanding office action. The application is believed to be in condition for allowance.

Prompt allowance of the application is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: March 2, 2006

Respectfully submitted,

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